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Ransome Patent
Concrete-
Cold-Twisted-Steel
Construction

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RANSOME CONSTRUCTION CO.

HARRISON BUILDING

FIFTEENTH AND MARKET STS.

PHILADELPHIA

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Ransome Patent
Concrete-
Cold-Twisted-Steel
Construction

FOR

Foundations, Piers, Walls, Beams and Girders of all spans,
Floors for all loads, Stairways, Vault Lights, etc.

AND FOR

Entire Fire-proof Monolithic Buildings, for all purposes

RANSOME CONSTRUCTION CO.

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FIFTEENTH AND MARKET STS.

PHILADELPHIA

(c. 1910)

PRESS OF
BURK & MCFETRIDGE CO.
PHILADELPHIA

NO architect of the present day, who has investigated the subject, questions the durability of concrete. That is now assured beyond question. Careful experiments have been conducted which prove that **CONCRETE CONTINUES TO GROW HARDER WITH AGE**. These experiments extended over a period of twenty years, and then the concrete had not ceased **TO INCREASE IN COMPRESSIVE STRENGTH**.

This desirable material has not been more generally used in **SUPERSTRUCTURES** because, 1st. The great compressive strength of concrete (the power to resist crushing) could not be utilized on account of its lack of sufficient tensile strength (the power to withstand a pulling strain). 2d. There was a lack of efficient appliances for making, handling, moulding and using it. Mr. Ernest L. Ransome, an experienced engineer and concrete specialist, after long investigation and experiment, discovered and patented a system the basis of which is the combination of cold-twisted iron or steel bars and concrete in such a manner as to give to the concrete all the tensile strength of the iron, thereby utilizing also the immense compressive strength of the concrete. By properly cold twisting the iron its tensile strength is vastly increased, and

its ductility decreased, and by this system it is held and controlled throughout its entire length in such a way, that the two materials are so perfectly united that the iron cannot stretch or draw without the concrete extending with it.

The Ransome system of concrete and cold-twisted-iron construction is, by reason of its great **STRENGTH**, its **DURABILITY**, its **LIGHTNESS**, its **FIRE-RESISTING QUALITIES**, of almost universal application, and is designed to cover the **ENTIRE FIELD** of iron, stone, brick and terra-cotta construction, including the laying of **HEAVY FOUNDATIONS** and **PIERS**, the construction of **MONOLITHIC BUILDINGS** for all purposes, of concrete **BEAMS** and **GIRDERS** for all spans and loads, and of **MONOLITHIC FIRE-PROOF FLOORS** in place of the heavier, more expensive, less fire-resisting, but not stronger floors of steel beams and hollow tiles.

By this method very heavy warehouses and factories have been built as well as buildings of a different character, and floors have been constructed with spans of up to 45 feet without intermediate support, and there has never been an occasion to tear down, reinforce or rebuild a single wall or floor.

In a recently constructed factory building a 25-ft. span on the fourth floor sustains a concentrated load of 1,350 lbs. to the square foot.

The desirability of the Ransome **STAIRWAYS** needs no comment in view of the fact that the stair well is, as a rule, subject to a fiercer heat than any other part of a burning building, and is too often the means of communicating the flames from one story to another.

This system of construction, the appliances by which the required materials are mixed, moulded, handled and used, and the means of controlling shrinkage, etc., are the inventions of Mr. Ernest L. Ransome and are duly covered by numerous patents.

The stairways shown on pages 18, 19 and 20 were built by the Aberthaw Company of Boston.



Twisted Iron. Strength increased by Cold Twisting.



FRONT VIEW

PACIFIC COAST BORAX CO'S REFINERY, BAYONNE, N. J.

Foundations, Walls, Floors, Columns and Chimney, of Ransome System
of Concrete-Cold-Twisted-Iron-Construction.

Floors, 25-foot spans; loads 500 lbs. to the foot. Chimney, 150 feet high.



REAR VIEW

PACIFIC COAST BORAX CO'S REFINERY, BAYONNE, N. J.

Foundations, Walls, Floors, Columns and Chimney, of Ransome System
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Floors, 25-foot spans; loads 500 lbs. to the foot. Chimney, 150 feet high.



BORAX FACTORY, BAYONNE, N. J

Interior View, showing floor, columns, girders, beams and under side of upper floor.



BORAX FACTORY, BAYONNE, N. J.

Interior View, showing floor, columns, girders, beams and under side of upper floor.



PACIFIC COAST BORAX CO.'s WORKS, ALAMEDA, CAL.



INTERIOR VIEW PACIFIC COAST BORAX CO.'S WORKS.
ALAMEDA, CAL.

Interior view of the Pacific Coast Borax Co's Factory, showing concrete columns and floors. These floors weigh only 70 lbs. to the foot. They have a clear space of 20 feet, and have repeatedly been loaded up to the ceiling with borax weighing not less than 570 lbs. to the square foot.

The "thickness" is but $2\frac{1}{2}$ inches, and yet these floors almost daily sustain a tank on wheels, carrying 1,000 lbs. of borax, which is rolled along the floor.



MUSEUM BUILDING, LELAND STANFORD JR. UNIVERSITY, PALO ALTO, CAL.
Percy & Hamilton Architects. Length, 312 feet; Longest span, 45 feet.



INTERIOR OF DOME, MUSEUM, PALO ALTO.
Dome entirely of concrete, twisted iron and glass.



INTERIOR OF WING, MUSEUM, PALO ALTO.



GIRLS' DORMITORY, PALO ALTO. Length, 180 feet. Completed in 90 days.



ACADEMY OF SCIENCES, SAN FRANCISCO.
Concrete and Twisted Iron Floors.



SCIENCE AND ART MUSEUM, MILLS COLLEGE.
Geo. A. Bordwell, Architect.

A BUILDING complete by the Ransome Construction is a **MONOLITH**. It is composed entirely of the **BEST FIRE-PROOF MATERIAL ITSELF**. In event of fire on any floor **WATER CANNOT DAMAGE CONTENTS OF OTHER FLOORS** by leaking through. The stairway will remain passable even **WHEN SUBJECTED TO GREAT HEAT** or to **HEAT AND WATER ALTERNATELY**.



BRICK BUILDING ENTIRELY SUPPORTED BY CONCRETE GIRDERS AND COLUMNS



MAYHEW SCHOOL, CHAMBERS AND POPLAR STREETS, BOSTON

Mr. JOHN LYMAN FAXON, Architect

Concrete stairs, with granolithic finish. Socket embedded in string to receive balustrade.



Y. M. C. A., SALEM, MASS.

Mr. WALTER J. PAINE, Architect.

Main landing carried on concrete beams of twenty-foot span. Tested with a load of five tons, concentrated at the centre. More handsome than iron.



Short Flight. Flat Soffit, Granolithic finish.



Shows concrete beams and soffit of a long flight.

RANSOME STAIRWAYS WILL REMAIN PASSABLE EVEN UNDER THE DIRECT ACTION OF FIRE



